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ABSTRACT

Reported in summary form is an accountability model developed in Duval County, Florida (funded through Title VI) for planning, developing, and operating an educational program for trainable mentally handicapped children. Background information consists in such aspects of accountability as systematic planning, assessing, and refining educational programs based on goals for the students; and a description of the project. The model is described as having two program phases: planning and development involves establishment of program goals, with participation of the lay community and professional educators; and specification of behavioral objectives includes three competency areas (social, academic, and occupational). One aspect of program operation is described as preliminary assessment of students' behavior in competency areas, which are subdivided into components (such as math), clusters (such as money concepts) and modules (with prescribed requirements for each cluster). The other aspect of program operation is described as formal assessment of students' behavior which is based on prior assessment and interim performance, and requires teacher selection of instructional approaches, implementation of strategies, and strategy evaluation. Presented are implementation strategies for planning, developing, and operating a program using the model; and operational suggestions (such as soliciting parental and community concerns, and the need for inservice teacher training). Provided in appendixes are behavioral objectives and their subsets, and assessment forms.

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ACCOUNTABILITY MODEL



EC052341

ACCOUNTABILITY STUDY
FOR TRAINABLE MENTALLY RETARDED CHILDREN AND YOUTH

TITLE VI-B

DUVAL COUNTY SCHOOL BOARD
JACKSONVILLE, FLORIDA
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Accountability Model

Accountability Study of the Program
for Trainable Mentally Retarded
Children and Youth

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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Prepared for

The Duval County School Board
Jacksonville, Florida

by

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May 1973

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INTRODUCTION

This report presents, in summary form, an Accountability Model applicable to the planning, development and operation of educational programs for trainable mentally retarded children. Following this introduction is a background section which discusses accountability in general, its application to TMR programs and the current accountability study in Duval County, Florida. The Accountability Model then is presented with the final section of the report dealing with implementation strategies.

This report was prepared for the Duval County School Board by the Institute for Development of Educational Auditing (the Institute), as a part of the evaluation of the first year of an Accountability Study of the Program for Trainable Mentally Retarded Children and Youth.

BACKGROUND

"As we move toward an educational system in which accountability for pupil learning assumes equal status with accountability for dollars, greater attention must be given to the management of educational programs to ensure that they meet actual and present needs of pupils.*

It's not enough merely to take notice of a need for accountability, or to exhort its virtues. Deliberate, systematic procedures for planning, assessing and refining educational programs must be actively pursued.

There is no real shortage of exciting ideas about how to energize and enhance the educational process. The principal problem is one of choosing among approaches, developing materials and procedures which reflect the options chosen and delivering high-quality products and services to the ultimate client, the student. This is essentially a management problem.

Effective management consists of identifying and allocating resources in order to optimize the achievement of stipulated goals and objectives. With increasing competition for resources in the public sector, resource management is

* Floyd T. Christian, Commissioner of Education, State of Florida. From the Forward to "Guidelines for District Comprehensive Educational Planning 1973-74".

undergoing closer scrutiny. Essentially, accountability reflects the need to achieve sound management of resources in the achievement of pre-defined goals.

The new accountability is not thing-centered, but student-centered. And the new accountability will be considered successful only if it helps the educational renewal process whereby the goals and objectives of education are continually modified to meet the changing needs of its clients, and educational programs are continually modified to facilitate the attainment of those objectives.

In 1971, the Florida Legislature adopted a policy endorsing educational accountability to provide validated information for decision making at the classroom, school, district and state levels through the process of establishing objectives, assessment of the degree to which the objectives are being achieved, and an analysis of the differential effectiveness and costs of educational programs. (Section 229.57, Florida Statutes).

The State's officially adopted "change strategy" consists of three basic elements:

- The first is an analysis of what educational programs ought to accomplish and what is being accomplished. That is, the strategy begins by identifying *clear goals and objectives*.
- The strategy then concentrates on finding out how well the goals and objectives are being attained. This is the process of *assessment and analysis*.

- The third element of the strategy is to identify additional ways to achieve the objectives, i.e., *alternative educational practices*. The continual application of this strategy is intended to perpetuate a continuous change process, rather than to institute a collection of specific changes which may put education on a higher plateau, but which will not necessarily maintain the responsiveness of the system.

In March 1971 the Duval County School Board applied for and received Federal assistance under Title VI of the Elementary and Secondary Education Act to conduct an Accountability Study of the Duval County Program for Trainable Mentally Retarded Children and Youth. The Institute was selected as the evaluation contractor for the first project year.

The existing curriculum of the program had been established from sequentially designed task skills which led to the accomplishment of stated program goals for each level. These task skills and program goals have been refined into acceptable behavioral objectives stating minimum levels of success as a part of the Accountability Project.

Major achievements of the first project year (1971-72) included 1) the development of a comprehensive picture of the performance objective structure in terms of validity, reliability and degree of difficulty of individual objectives, 2) the determination of significant relationships among

pupil and program factors and pupil performance, 3) collection and analysis of preliminary program cost and performance data and 4) development of an Accountability Model and the procedures for its implementation.

Major elements of the second project year include 1) development of an overall organizing model for all performance objectives, 2) revision of objectives so that they meet realistic requirements of specificity, 3) writing of criterion-referenced items for each objective, specifying procedures to be used in assessing pupil performance, 4) revision of assessment procedures so that a pupil is assessed on objectives appropriate for his individual skills rather than his chronological age, and 5) extensive training of teachers in the objective assessment of trainable pupil performance.

The Accountability Model developed through this project could be applied to most TMR programs. It provides for more effective allocation of resources in attaining specific objectives and the communication of results to pupils, teachers, parents and community.

Although validation and implementation of the model are continuing through the second project year, this report provides a description of the overall model and discusses strategies for its implementation.

MODEL OVERVIEW

Structure of the Model

The Accountability Model presented in this report is structured to function in two major program phases; 1) planning and development and 2) operation.

In the planning and development phase the model can be related to the three basic elements of Florida's adopted change strategy (i.e., identifying goals and objectives, assessing objective attainment and analyzing programs and identifying alternative educational practices).

In the operational phase, the model deals with the operation and evaluation of an established instructional program.

The overall model consists of the following six elements:

- Establishing Program Goals
- Specifying Program Objectives
- Determining Students' Level of Attainment on Appropriate Objectives
- Selection of Alternative Instructional Approaches by Teacher
- Implementing the Selected Strategy
- Evaluating the Effectiveness of the Strategy

Program Planning and Development

Two of the six elements of the model can be related to the planning and development of an accountability-based TMR program. Because planning and development can be considered on-going functions, this aspect of the model is relevant to existing as well as to planned programs.

The two elements and their interrelationships are discussed in the following paragraphs.

● Establishing Program Goals

Program goals are the basis for any rational management plan or accountability model. They provide an orientation to the main emphasis of an educational program and represent the link between the program and the values, desires, needs and expectations of the community.

Unfortunately, they also tend to be the weak link in the developmental chain. Even well established programs with detailed performance objectives often lack clear program goals.

Two major steps are required in establishing program goals: identifying potential goals and determining their relative importance. It is essential that both the lay

community and professional educators participate in these steps, to insure that the goals are realistic.

- Specifying Program Objectives

Program objectives should be based upon program goals and should be measurable, communicable statements of intent.

To date, the Duval County TMR program has developed pupil behavioral objectives spanning three competency areas (social, academic and occupational). These objectives form the framework for the "operational" accountability model discussed later in this report.

In applying this model to another planned or existing TMR program, these objectives can be reviewed in the light of program goals. A subset of the objectives then can be selected, objectives can be modified and others created to support the program goal structure.

Program Operation

If the decision is made to use this model for operation of a TMR program, the following four elements are involved:

- Determining Students' Level of Attainment or Appropriate Objectives
- Selection of Alternative Instruction of Approaches by Teacher
- Implementing the Selected Strategy
- Evaluating the Effectiveness of the Strategy

This section presents the application of the model using the procedures and materials developed and now being validated by Duval County.

● Determining Students' Level of Attainment on Appropriate Objectives (Preliminary Assessment)

The objectives consist of Behavioral Objectives in the areas of social, academic and occupational competency.

Each Area of Competency is subdivided into Components. (e.g., Academic Competency includes components for Communication Skills, Math and Physical Motor Skills).

Each Component is subdivided into Clusters. (e.g., the Math Component includes Clusters for Measurement, Money Concepts, Counting and Numeral Identification and Addition and Subtraction).

Each Cluster consists of Modules, (e.g., the Counting and Numeral Identification Cluster includes Oral Counting, Counting Object and Quantitative Concepts Modules).

For each Module the documentation consists of a statement of purpose, a set of behavioral objectives, references to pre and/or co-requisite objectives, criterion test items for each objective, a listing of related instructional materials, method-media information and suggested activities.

This documentation is contained in an Objective Catalog (see Appendix A for an example of a Module from the Catalog).

For each program participant, a preliminary informal assessment is made by the teacher, using a set of Competency Checklists. (The Social Competency Checklist is included as Appendix B).

- Determining Students' Level of Attainment on Appropriate Objectives (Formal Assessment)

Based upon the information from the preliminary assessment and the progress made by the students in the interim, the teacher develops a prioritized list of objectives for each pupil.

This step involves a comprehensive decision-making process, since the teacher must consider many factors in addition to the importance of a particular objective for a given student. For example, the number of pupils in a group for which a given objective is appropriate and the nature of available instructional materials and sequencing must be taken into account if all the students are to be productively engaged.

The teacher then conducts a more "formal" assessment of each student using criterion-referenced tests. (See Appendix C for examples of Criterion Test Items.)

Based upon the criterion-referenced test results, the teacher is able to specify a unique set of priority needs to be addressed for each pupil.

- Selection of Alternative Instructional Approaches by Teacher

When all students' needs have been structured, the teacher considers various specific classroom strategies for meeting the needs. The Objective Catalog provides information relating to method-media and classroom activities.

The Duval County TMR program staff considered and experimented with a number of approaches before selecting the procedures and materials now being implemented to meet program needs. Many of the problems encountered during this process are discussed in the final section of this report.

The strategy developed by Duval County includes a diagnostic-prescriptive instructional program which permits large degrees of individualization within the classroom; however, the use of this Accountability Model in the program operation phase does not require a highly individualized instructional approach.

- Implementing the Selected Strategy

After selecting the instructional strategy, the teacher carries out the prescribed activities.

- Evaluating the Effectiveness of the Strategy

When the teacher feels that a student has mastered an objective, the criterion-referenced test is readministered and analyzed. If the student has mastered the objective, another objective is selected for testing; if not, instruction is continued until the teacher again believes that the student has mastered the objective.

At the completion of the academic year, the progress of the teacher with each student can be summarized. Also, the progress of all students in mastering the selected objectives can be combined with cost information for administrative reporting and cost-effectiveness analysis.

A procedure for external validation of the teachers' diagnoses can be used, in which an outside observer readministers pre and post test items to verify the teachers' finding.

Summary of Model Overview

This Accountability Model for TMR Programs, now in its second year of development, can be applied both to program planning and program operation. Furthermore, it supports Florida's adopted change strategy.

Duval County is now developing and refining the procedures and materials needed to apply the Model as an operational tool.

Provisions have been made to accomodate both group and individualized instructional programs. Emphasis is on accurate assessment of individual pupils in terms of given objectives before and after the application of a related treatment. An important feature in this regard is that while all students need not necessarily receive the same test items or instructional treatment, the progress each student makes in terms of the objectives selected for him is considered in program evaluation.

IMPLEMENTATION STRATEGIES

The Accountability Model outlined in the preceding section has evolved as a major product of Duval County's Accountability Study of the Program for Trainable Mentally Retarded Children and Youth.

The model has general application for the planning, developing and operating of TMR programs. An overall strategy for its use with an existing program is presented in this section, along with some supporting tactics.

Phase I - Planning and Development

The two elements of the Model which are related to this phase have been discussed in the preceding section of this report. Before applying the Model as an operational tool, these elements should be implemented.

If program goals are not formally stated, the program staff, with the involvement of parents and community representatives, should establish a set of realistic goals and structures them in terms of priorities.

In developing a comprehensive list of goals, there are many sources to which one can look for help. Some typical sources include:

- State and federal mandates and legislation

- Local and national concerns as indicated by such sources as editorials, articles and legislation.
- Parental concerns as voiced in letters, PTA meetings and conferences with parents.
- Community concerns as voiced by business organizations, pressure groups, and similar sources.
- School records and reports, such as attendance, discipline, and test scores.
- Curriculum guides, program descriptions and recommendations of responsible educational institutions and organizations.
- Teachers' reports and comments.
- Prepared composite sets of objectives and goals, such as those developed by the Duval County TMR Program staff.

If the goals are going to be rated by parents and community representatives, care should be taken to ensure that the reading level is appropriate both for the goals and for the instructions to the reviewers.

Program objectives should be developed and structured to correspond with the program goals. For those program objectives relating to student performance, the program staff can review the Objective Catalog, selecting those competencies, components, modules and objectives which are compatible with the program goals. Additional objectives can be written, where required, to complete the objective structure.

It is critical to this activity that teachers and other involved staff members receive adequate training in the writing of objectives and criterion test items.

Phase II - Program Operation

Implementation of the Accountability Model in program operation is based on the use of a set of procedures and materials developed by Duval County and appropriately modified by the "user" through the Phase I functions.

The four elements of the Model applicable to program operation were discussed previously. The following considerations are offered to give potential users the benefit of Duval County's experience to date in developing and applying the Model.

Determining the status of objective attainment for each student and identifying each student's needs is a two stage process. The first stage involves "informal" procedures such as teacher checklists and parental responses. The second stage is based on the use of criterion-referenced tests.

To strengthen the first step, it would be desirable to have a set of sequential diagnostic tests covering the most important program objectives. These could be constructed from the Objective Catalog test items.

With regard to the second assessment stage, it is essential that all objectives and criterion test items have a high degree of specificity. As initially developed by Duval County, the objectives and the related test items provided too much latitude to the test administrators.

The objectives and test items in the Objective Catalog have been re-written to correct this deficiency. Additional objectives and items written by the user should be analyzed to see that they meet the requirements for specificity.

Test administration procedures also should be designed to minimize the classroom time required for testing.

Another point on test administration relates to the "assignment" of objectives to program levels. Initially, Duval County identified each objective with a program level (e.g., Primary II). This subsequently was abandoned in favor of an individualized procedure which permits each student to work more or less at his own performance level, while allowing students to be grouped by age in the program.

The use of a monitor to verify teacher assessments on a sample basis is recommended. This will provide not only an independent measure of student performance but also a measure of test item reliability.

A final test administration procedure is the periodic re-assessment of students on previously mastered objectives. Done on a sample basis, it can provide valuable information on the retention of student performance abilities.

The student assessment steps should provide much information relative to the relationships among objective attainment and various student and program variables. The reader is referred to the *Summary Evaluation Report: Accountability Study of the Program for Trainable Mentally Retarded Children and Youth*, Institute for Development of Educational Auditing, May 1973.

Although not included as a separate element of the Model, program cost-effectiveness analysis is an important part of program evaluation. The approach developed for the Duval County program is based upon time and budget constraints and upon the nature of the cost and performance data available from Duval County records.

Both direct and indirect costs are determined or estimated. Cost allocation levels are identified as system, program, school center and classroom. At each level, appropriate procedures for cost determination and/or estimation are applied. The resultant costs can be expressed both as total costs and as costs per "equivalent pupil".

It was decided that Program effectiveness would be measured in terms of numbers of objectives mastered by Program pupils during the project year. Rather than attempting to assign the various teaching activities to the accomplishment of specific objectives, it was assumed that all the objectives are equally advanced by the continuous teaching process. This is perhaps a poor assumption. However, with so many objectives, the problem of the assignment of teaching activities to specific objectives was beyond the resources of the project.

Given the above assumption, it is possible to assign each objective a value based on its relative importance. Such a value could be determined through teacher, parent and community involvement. For the first project year each objective was assigned a value of one. Overall program attainment then was measured by the total estimated value points gained during the project year. Since this was the first project period measured, there were no realistic standards or "expected values" against which Program efficiency could be evaluated.

Another point relating to program evaluation is the need for the collection and maintenance of student and program data. A Program Information System of some form should be established prior to implementation of the Model.

Although it is not necessary to computerize such a system, detailed procedures and forms should be developed and followed.

A final consideration relating to the entire program operation phase is the need for staff training. Development of objectives and test items, administration of criterion-referenced tests, selection of instructional strategies and monitoring of student performance all require specific skills. A comprehensive inservice program is essential to effective implementation of the Model.

SUMMARY

The Accountability Model outlined in this report was planned and developed by Duval County and Institute personnel. It is now being refined and validated through its use as an operational tool in the Duval County TMR program.

The evidence to date supports the effectiveness of the Model both as a change strategy and the framework for an operational program. Therefore, it should have application for the planning, development and operational phases of any TMR program, with a minimum of user modifications.

Further information regarding the Model and its implementation can be obtained from Mr. William L. Geiger, Project Coordinator, or Mr. Keith Brown, Project Evaluator, Duval County School Board, Jacksonville, Florida.

APPENDICES

Appendix A

2.2.3.4

COMPETENCY: Academic
COMPONENT: Math
CLUSTER: Counting and Numerical Identification
MODULE: Quantitive Concepts

I. PURPOSE:

Counting and numerical identification are desirable aspects of Math. The purpose of this module is to produce behaviors in knowing the quantities of more or less, dozen, ordinal numbers through 10, last, all, some, none, and more than none.

II. BEHAVIORAL OBJECTIVE:

2.2.3.4.1 Given ten pairs of numbers, no two numbers being identical in the pair, the student will indicate by touching which number in the pair is more or which number in the pair is less with 100% accuracy.

2.2.3.4.2 Given three sets of three groups of blocks, one group in each set containing a dozen blocks and the other two groups containing various numbers of blocks, the student will touch the group in each set that contains the dozen blocks with 100% accuracy.

2.2.3.4.3 Given a row of twenty objects and a situation in which the student is asked to find the 1st, 10th and last object in response to non-sequential response to teacher's request with 100% accuracy.

2.2.3.4.4 Given five sets of blocks varying in number, the student will indicate his understanding of the concepts all, some, and none by handing the appropriate amount of blocks to the teacher in response to verbal teacher requests, with 100% accuracy.

2.2.3.4.5 Given a set of ten pictures, five showing only one object and five showing varied numbers of objects, but always more than one, the student in response to teacher direction will group those pictures showing more than one object in a pile with 100% accuracy.

III. PRE AND/OR CO-REQUISITES:

2.2.3.4.1 None

2.2.3.4.2 See module on Counting Objects, objective 2.2.3.2.2

2.2.3.4 (continued)

2.2.3.4.3 None

2.2.3.4.4 None

2.2.3.4.5 None

IV. INSTRUCTIONAL MATERIALS, METHOD-MEDIA, AND ACTIVITIES:

2.2.3.4.1 Ten pairs of numbers, no two numbers being identical in the pair.

- a. Teacher demonstration
- b. Student demonstration
- c. Teacher helping student
- d. Number games
- e. Worksheets
- f. Blocks

2.2.3.4.2 Three sets of 3 groups - one group in each set containing a dozen blocks - 2 groups in each set containing various numbers of blocks.

- a. Use an egg carton, place a peg in each hole and count while doing this, use the word dozen in connection with counting to 12
- b. Have a mock bakery, use clay, etc., as cookies and have students order a dozen, count them orally

2.2.3.4.3 One row of twenty objects.

- a. Teacher demonstration
- b. Student demonstration
- c. Worksheets
- d. Musical chairs
- e. Blocks
- f. Kinds in line-up
- g. Games (Simon Says and What Number Comes Next)

2.2.3.4 (continued)

2.2.3.4.4 Five sets of blocks varying in number.

a. Teacher demonstration

b. Exercises to strengthen knowledge of all, some, none. Give student five crayons, etc., tell him to put none away, some away, and all away in box

c. Worksheets - have five rows of four objects - give separate verbal directions for each row - (e.g., color some of the balls green, circle all of the dogs, put an X on none of the boys)

d. At snack-time you could give a student some of the juice, all of the juice, or none of the juice just for practice. Then divide it evenly with the class

e. Posters showing a group and parts of that group, including all, some, none

2.2.3.4.5 A set of ten pictures - five showing only one object and five showing varied numbers of objects but always more than one.

a. Exercises to strengthen knowledge of more than one - give student five blocks and tell him to hand you one block and then hand you more than one

b. Worksheets - have five rows of four pictures - three pictures will show one and one picture will show more than one - tell the student to circle the picture showing more than one

c. Pictures - posters

d. Class discussion

Appendix B

SUBJECT _____ TEACHER _____
DATE _____

Place an X in the blank in front of each skill found to be appropriate for the student named.

I. SOCIAL COMPETENCY

A) Self-Care

1) Cleanliness

a) Wiping (1.1.1.1)

- ___ wiping mucous from face
- ___ wiping food from face
- ___ wiping food from hands

b) Washing and Drying (1.1.1.2)

- ___ shampooing hair
- ___ brushing teeth
- ___ washing face
- ___ washing hands

c) Bathing (1.1.1.3)

- ___ taking a shower
- ___ turning on and testing water in a shower

2) Eating

a) Solid Food (1.1.2.1)

- ___ picking up, chewing, and swallowing solid food

b) Liquid Food (1.1.2.2)

- ___ using a drinking fountain
- ___ using a straw for drinking
- ___ drinking from a glass

c) Use of Utensils (1.1.2.3)

- ___ using a knife, fork, and spoon
- ___ selecting the proper utensil for different foods
- ___ selecting clean dinnerware

d) Balanced Eating and Drinking (1.1.2.4)

- ___ eating of food from each food group
- ___ knowledge of an appropriate quantity of solid food
- ___ knowledge of nutritional value and appropriate quantity of liquid foods

Appendix C

TAKING OFF 1.1.4.1

Pupil _____ Teacher _____
 (last) (first) (initial) (last) (first) (initial)

V. CRITERION TEST ITEM:

TEACHER NOTE:

1.1.4.1.1 To test this objective you need an article of clothing that can be pulled off such as a shirt without buttons. The student is wearing the article of clothing. Tell the student to take his shirt off. You may give the instructions twice, but do not prompt additionally either verbally after the student begins or by demonstration at any time.

Grasps both sides of the shirt with each hand (1)
 Pulls over shoulders (2)
 Slides down arms (3)
 Removes arms from armholes (4)

Date of Test Mo. Day Year
 (56-57) (58-59) 197 (60)

Teacher: DO NOT WRITE BELOW THE LINE

RC T NOO NO1
 0 3 9
 (61) (62-63) (64-66) (67-68)
 S R BD IQ HC
 (69-80)

HAMMERING - TOOLS 3.2.3.1.4

Pupil _____ Teacher _____
 (last) (first) (initial) (last) (first) (initial)

V. CRITERION TEST ITEM:

TEACHER NOTE:

3.2.3.1.4.2 To test this objective you will need a claw hammer, five nails of varying sizes, and a block of wood. Give the student the materials and tell him to drive the nails completely into the wood. You may give the instructions twice but do not prompt additionally either verbally after the student begins or by demonstration at any time.

Holds nails firmly in place with one hand	(1)
Holds the hammer handle firmly near the end	(2)
Strikes a light first blow to start nail	(3)
Removes hand from nail	(4)
Continues to strike the nail, directly on the head, until it is driven even with the wood	(5)
Does not bend nail	(6)
Does not dent the wood	(7)

Date of Test Mo. Day Year
 _____ _____ _____ 197 _____
 (56-57) (58-59) (60)

Teacher: DO NOT WRITE BELOW THE LINE

RC	T	NOO	NOI	
(61)	(62-63)	(64-66)	(67-68)	
S	R	BD	IQ	HC
____/____	____/____	____/____	____/____	____/____
(69-80)				